



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/520,075

09/28/2005

Terry P Bowen

17885 A

9531

26794 7590 08/09/2007  
TYCO TECHNOLOGY RESOURCES  
4550 NEW LINDEN HILL ROAD, SUITE 140  
WILMINGTON, DE 19808-2952

EXAMINER

LUU, THANH X

ART UNIT

PAPER NUMBER

2878

MAIL DATE

DELIVERY MODE

08/09/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/520,075	Applicant(s) BOWEN ET AL.	
	Examiner Thanh X. Luu	Art Unit 2878	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 July 2007 and 08 June 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 3-24 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16, 18-22 and 24 is/are allowed.
- 6) ☒ Claim(s) 1, 3-15 and 23 is/are rejected.
- 7) ☒ Claim(s) 17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 June 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 8, 2007 has been entered.

Claims 1 and 3-24 are currently pending.

### ***Claim Objections***

2. Claim 17 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

The steps (a) and (b) being performed in a single photolithography step is already claimed in independent claim 16.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3, 4, 8-11, 13-15 and 23 are rejected under 35 U.S.C. 103(a) as being

Art. Unit: 2878

unpatentable over Heinen et al. (U.S. Patent 4,768,199) in view of Matsumoto (U.S. Patent 5,849,204).

Regarding claims 1, 3, 4, 11, 13-15 and 23, Heinen et al. disclose (see Figs. 1-5) an optical assembly having a top and bottom orientation and comprising: a platform (111) defining an upward-facing v-groove (113) with walls of a certain pitch; a first optical component (2) having a substrate with a downward facing reference surface and two sides (8, 9), each side being beveled at the certain pitch outwardly from the reference surface, and comprising at least one optical element (7) secured to the reference surface, the optical element having a first optical axis (at 7); and a second optical component (21) having an outer periphery with at least two contact points and a second optical axis, the second optical component being disposed in the v-groove such that the contact points contact the walls of the V-groove and the second optical axis is coaxial with the first optical axis. The laser (7) is a semiconductor active element that defines the optical axis. Heinen et al. do not specifically disclose that the first optical component being supported by the platform solely by the contact of the sides against the walls. Matsumoto teaches (see Figs. 4A and 4B) a similar device in which support is solely by the contact of the sides on a v-groove. Thus, Matsumoto recognizes that other support is not required. Heinen et al. further teaches (see col. 4, lines 61-65) it is the contact of the sides that is most important for exact positioning. Thus, one of ordinary skill in the art would appreciate that the contact or support created by surfaces 12 and 4 is incidental and would not affect the nature and operation of the device. It would have been obvious to one of ordinary skill in the art at the time the invention was

made provide only sole support by the sides as claimed in the invention of Heinen et al. in view of Matsumoto for exact positioning as taught.

Regarding claims 8-10, Heinen et al. in view of Matsumoto disclose the claimed invention as set forth above. Heinen et al. and Matsumoto do not specifically disclose the type of materials as claimed or the pitch. However, choosing the particular type of material and pitch is a matter of design choice and would require only routine skill in the art. It would have been obvious to one of ordinary skill in the art at the time the invention was made provide the same materials for each component in the apparatus of Heinen et al. in view of Matsumoto to simplify manufacturing.

5. Claims 5-7, as understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Heinen et al. in view of Matsumoto and further in view of Fukuda et al. (U.S. Patent 6,931,215).

Regarding claims 5-7, Heinen et al. in view of Matsumoto disclose the claimed invention as set forth above. Heinen et al. further discloses a laser diode. Heinen et al. and Matsumoto do not specifically disclose a monitor diode as claimed. Fukuda et al. teach (see Fig. 1) a similar module having a laser diode (1) optically connected to a monitor diode. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a monitor diode on the substrate as claimed in the apparatus of Heinen et al. in view of Matsumoto and Fukuda et al. to provide feedback for intensity control and improve transmission as taught.

6. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heinen et al. in view of Matsumoto and further in view of Sherrer (U.S. Patent 6,786,649).

Regarding claim 12, Heinen et al. in view of Matsumoto disclose the claimed invention as set forth above. Heinen et al. and Matsumoto do not specifically disclose the second optical component comprises a substrate having beveled sides as claimed. Sherrer teaches (see Figs.) a fiber waveguide having beveled sides. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a beveled waveguide substrate as claimed in the apparatus of Heinen et al. in view of Matsumoto and Sherrer to obtain a better more stable fit.

***Allowable Subject Matter***

7. Claims 16, 18-22 and 24 are allowed over the prior art of record.

***Response to Arguments***

8. Applicant's arguments filed June 8, 2007 have been fully considered but they are not persuasive.

Applicant asserts that Heinen et al. do not disclose a downward-facing reference surface that has at least one optical element secured to the reference surface because the optical element 7 is actually the reference surface itself. Examiner disagrees. The reference surface of Heinen et al. is part the substrate 2. As understood, the optical element 7 is layered on top of a surface of 2. Therefore, optical element 7 is secured (through layered depositions to form the laser) to a downward-facing reference surface of substrate 2. Applicant's characterization of the prior art is incorrect. Furthermore, Applicant's concern with the term "optical component" and "optical element" is a matter of semantics and is not persuasive, since nothing in the claims precludes such an interpretation.

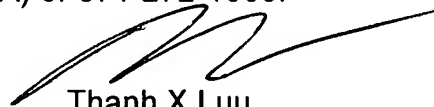
Thus, as set forth above, this rejection is proper.

**Conclusion**

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh X. Luu whose telephone number is 571-272-2441. The examiner can normally be reached on M-F 6:00AM-3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on 571-272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Thanh X Luu  
Primary Examiner  
Art Unit 2878

08/2007